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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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11/15/2002

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EXAMINER

ABRAMS, NEIL

ART UNIT

PAPER NUMBER

2839

DATE MAILED: 11/15/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/691811

Applicant(s)

Examiner

Group Art Unit

2839

--The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address--

Period for Response

A SHORTENED STATUTORY PERIOD FOR RESPONSE IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a response be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for response specified above is less than thirty (30) days, a response within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for response is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to respond within the set or extended period for response will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- ☒ Responsive to communication(s) filed on 9-17-02
- ☒ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-5, 8-10, 12-20, 25-36, 38-41 is/are pending in the application.
- ☐ Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-5, 8-10, 12-20, 25-36, 38-41 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
 - ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been received.
 - ☐ received in Application No. (Series Code/Serial Number) _____.
 - ☐ received in this national stage application from the International Bureau (PCT Rule 1.7.2(a)).

*Certified copies not received: _____

Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☐ Interview Summary, PTO-413
- ☐ Notice of References Cited, PTO-892
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Other _____

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Spec. Page 11, line 21 is unclear.

Claims 1-5, 8-10, 12-20, 25-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gaudenzi in view of LaVasco and Dozier).

Spec prior office action.

It would have been obvious to form Gaudenzi pins 58 with stops in view of patent ^{Gaudenzi} disclosure, col 6, lines 20-25, and in view of the use of stops in LaVasco. The solder balls 56 would tend to self-align as taught by Dozier, and could be fixed to contacts as in Dozier, figs 4, 5B, 5C.

Claims 1, 9, 31, 39, and 40 are directed to a "connector" mountable to a substrate, and limitations as to a reflow step and an order of fusing a post "after" solder balls fuse relate to a manner of use and not to any structure of the connector. Note that the post solder 329 and reflow process are not part of the claimed combination.

The article claims are to the connector prior to any reflow step. The structure claimed in shown by Gaudenzi and specific aspects of the reflow step cannot be relied upon to overcome the reference. Applicant is asked to indicate how the connector "prior to mounting" would differ from that shown by Gaudenzi, fig 8.

In addition, should the fusing order be given patentable weight, it is also asserted that since Gaudenzi, fig. 8 structure is like that of applicants fig. 3, the same factors could affect the fusing rate of solder balls 56 and solder 66. If the metal post would "cool more slowly" than the

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solder balls, as with applicant device, see page 11, line 21, post fusing could occur after solder ball fusing.

It also would have been obvious to form the Gaudenzi assembly so that self-alignment occur (as per Dozier) prior to final fusing of pin 58 in hole ⁶²~~78~~. It would also have been obvious to first heat balls 56 and then to heat post 58 during a single reflow operation.

For method claim 15, no order of fusing steps is seen to be required and the claim limitations would be met by the patent regardless of the order of fusing. Note that claim 15 steps are not listed in order of occurrence, see line ~~4,5~~, hence is met by Gaudenzi steps with addition of a stop means to posts 58.

Claims 1-5, 8-10, 12-20, 25-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over (Dozier in view of Gaudenzi and LaVasco).

See last office action and above discussions.

Applicant's arguments filed with the amendment have been fully considered but they are not persuasive.

Arguments on page 7 as to a "single pass through the reflow oven" relate to use of the device and do not affect patentability of the article claims.

Claim 15 does require a reflow step but does not recite any order of fusing.

In additions, it seems likely that during a reflow process the Gaudenzi solder balls 56 could be fused to substrate 56 prior to final fixation of posts 58 in holes 62 and that self alignment would take place prior to fixation of posts 58 in holes 62.

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THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication should be directed to N Abrams at telephone number (703) 308-1729.

N ABRAMS/pj

11/13/02


NEIL ABRAMS
EXAMINER
ART UNIT 322